

What is Claimed is:

1 1. A system for bridging a first communications
2 network having a payload subnetwork and a signaling
3 subnetwork with a second communications network that is
4 packet-switched, comprising:
5 a. a communications management object that
6 coordinates the transfer of information between the
7 first communications network and the second
8 communications network;
9 b. a payload object linked to the
10 communications management object, wherein said payload
11 object transfers payload information between the system
12 and the payload subnetwork of the first communications
13 network;
14 c. a signaling object linked to the
15 communications management object, wherein said signaling
16 object transfers signaling information between the
17 system and the signaling subnetwork of the first
18 communications network in accordance with a signaling
19 protocol associated with the signaling subnetwork; and
20 d. a packet object linked to the
21 communications management object, wherein said packet
22 object transfers payload and address information between
23 the system and the second communications network in
24 accordance with a communications protocol associated
25 with the second communications network.

1 2. The system according to claim 1, wherein the
2 payload object may be linked to a plurality of access
3 points contained within the payload subnetwork of the
4 first communications network.

1 3. The system according to claim 1, wherein the
2 signaling object may be linked to a plurality of access
3 points contained within the signaling subnetwork of the

4 first communications network.

1 4. The system according to claim 1, wherein the
2 packet object may be linked to a plurality of access
3 points contained within the second communications
4 network.

1 5. The system according to claim 1, wherein the
2 communications management object coordinates the
3 transfer of information between the first communications
4 network and the second communications network by
5 initiating at least one of the tasks of communications
6 session setup, communications session tear down,
7 bridging of two communications requests or routing of a
8 communications to a communications access point in one
9 of the first communications network or the second
10 communications network.

1 6. The system according to claim 1, wherein the
2 communications management object further coordinates the
3 handling of operations, administration, maintenance and
4 provisioning functions.

1 7. The system according to claim 1, further
2 comprising an application resource object that
3 coordinates the handling of operations, administration,
4 maintenance and provisioning functions.

1 8. The system according to claim 1, further
2 including an application database, said database
3 comprising communications contact information for a
4 plurality of users.

1 9. The system according to claim 8, wherein the
2 application database further comprises a set of user
3 profiles including a user's preferred communications

4 mode for having communications contact established with
5 another.

1 10. The system according to claim 1, wherein the
2 payload object includes signal processing capability for
3 processing the payload information.

1 11. The system according to claim 1, wherein the
2 packet object includes signal processing capability for
3 processing the payload information.

1 12. The system according to claim 1, further
2 comprising an application resource object having signal
3 processing capability for processing the payload
4 information.

1 13. The system according to claim 1, wherein the
2 communications management object coordinates a transfer
3 of information between the first communications network
4 and the second communications network by causing the
5 system to perform the tasks of:

6 a. determining a desired characteristic
7 associated with a requested communication;

8 b. determining traffic conditions for each
9 of the first communications network and the second
10 communications network; and

11 c. determining from the traffic conditions
12 and from the desired characteristic associated with the
13 requested communication whether to route the
14 communication to the first communications network or to
15 the second communications network.

1 14. The system according to claim 13, wherein the
2 desired characteristic associated with a requested
3 communications includes at least one of a desired
4 quality of service for the communication, a time during

5 which the communication is to be routed, a cost of
6 routing the communication, or a user's preferred
7 communications mode for having communications contact
8 established with another

1 15. The system according to claim 13, wherein the
2 communications management object coordinates a transfer
3 of information between the first communications network
4 and the second communications network by causing the
5 system to further perform the tasks of:

6 e. selecting an access point of the
7 determined network to which the communication is to be
8 routed; and

9 f. initiating the routing of the
10 communication to the selected access point for the
11 determined network.

1 16. The system according to claim 1, wherein the
2 communications management object coordinates a transfer
3 of information between the first communications network
4 and the second communications network by causing the
5 system to perform at least one of the tasks of:

6 a. initiating a communications contact in
7 response to a user clicking a hypertext link;

8 b. sending a message to a user requesting a
9 return communications contact;

10 c. scheduling a time to initiate a
11 communications contact between two users;

12 d. initiating a sequence of communications
13 contacts until the party to be contacted is reached; and

14 e. directing a communications contact
15 addressed to a user to a mailbox.

1 17. The system according to claim 1, wherein the
2 communications management object coordinates a transfer
3 of information between the first communications network

4 and the second communications network by causing the
5 system to route a communication based upon at least one
6 of a desired quality of service for the communication, a
7 time during which the communication is to be routed, a
8 cost of routing the communication, or a user's preferred
9 communications mode for having communications contact
10 established with another.

1 18. The system according to claim 1, wherein the
2 communications management object coordinates a transfer
3 of information between the first communications network
4 and the second communications network by causing the
5 system to bridge a communications session between two
6 users such that information is transferred between the
7 users over each of the first communications network and
8 the second communications network.

1 19. The system according to claim 1, further
2 comprising an application resource object that
3 coordinates the handling of multimedia-enhanced voice
4 communications.

1 20. The system according to claim 19, wherein the
2 handling of multimedia-enhanced voice communications
3 includes receiving voice information over the first
4 communications network and information other than voice
5 information over the second communications network.

1 21. The system according to claim 20, wherein the
2 information other than voice information received over
3 the second communications network is directed to a
4 multimedia mailbox.

1 22. The system according to claim 1, further
2 comprising an application resource object that
3 coordinates the task of universal messaging, said task

4 of universal messaging including the integration of e-
5 mail messages, facsimile messages, and voice messages
6 into a common mailbox.

1 23. The system according to claim 22, wherein the
2 task of universal messaging further includes the
3 conversion of the content of messages from one format to
4 another.

1 24. The system according to claim 22, wherein the
2 task of universal messaging further includes retaining
3 the multimedia content of received messages.

1 25. The system according to claim 22, wherein the
2 task of universal messaging further includes initiating
3 a return message in response to a user clicking a
4 hypertext link.

1 26. The system according to claim 22, wherein the
2 task of universal messaging includes causing the system
3 to perform at least one of the tasks of:

- 4 a. retrieving at least one of a stored
5 e-mail message, a stored voice mail message, or a stored
6 facsimile message, wherein the stored e-mail message,
7 the stored voice mail message, and the stored facsimile
8 message may be stored in different sites;
9 b. scheduling of delivery and storage of
10 requested multimedia information;
11 c. storing a message;
12 d. printing a message; and
13 e. forwarding a message.

1 27. The system according to claim 26, wherein the
2 at least one of a stored e-mail message, a stored voice
3 mail message, or a stored facsimile message may be
4 retrieved by invoking an interactive voice response

5 system that facilitates retrieval of a text-based
6 message using a telephone.

1 28. The system according to claim 1, wherein
2 information is retrieved from a Web-based server
3 accessible over the second communications network using
4 a telephone linked to the system through the first
5 communications network.

1 29. The system according to claim 28, wherein the
2 information retrieved from a Web-based server is
3 directed by the system to at least one of a multimedia
4 device or a multimedia mailbox.

1 30. The system according to claim 28, wherein the
2 information retrieved from a Web-based server is
3 converted from one format to another.

1 31. A system for bridging a first communications
2 network having a payload subnetwork and a signaling
3 subnetwork with a second communications network that is
4 packet-switched, comprising:

5 a. a communications management object that
6 coordinates the transfer of information between the
7 first communications network and the second
8 communications network;

9 b. a plurality of payload objects linked to
10 the communications management object, wherein each
11 payload object transfers payload information between the
12 system and the payload subnetwork of the first
13 communications network;

14 c. a plurality of signaling objects linked
15 to the communications management object, wherein each
16 signaling object transfers signaling information between
17 the system and the signaling subnetwork of the first
18 communications network in accordance with a signaling

19 protocol associated with the signaling subnetwork; and
20 d. a plurality of packet objects linked to
21 the communications management object, wherein each
22 packet object transfers payload and address information
23 between the system and the second communications network
24 in accordance with a communications protocol associated
25 with the second communications network.

1 32. The system according to claim 31, further
2 comprising a network for linking the plurality of
3 payload objects, the plurality of signaling objects and
4 the plurality of packet objects to the communications
5 management object.

1 33. The system according to claim 31, wherein the
2 physical locations of the plurality of payload objects,
3 the plurality of signaling objects and the plurality of
4 packet objects are spread across a geographic area.

1 34. The system according to claim 31, wherein at
2 least one of the plurality of payload objects may be
3 linked to a plurality of access points contained within
4 the payload subnetwork of the first communications
5 network.

1 35. The system according to claim 31, wherein at
2 least one of the plurality of signaling objects may be
3 linked to a plurality of access points contained within
4 the signaling subnetwork of the first communications
5 network.

1 36. The system according to claim 31, wherein at
2 least one of the plurality of packet objects may be
3 linked to a plurality of access points contained within
4 the second communications network.

1 37. A method of bridging a first communications
2 network having a payload subnetwork and a signaling
3 subnetwork with a second communications network that is
4 packet-switched, comprising the steps of:
5 a. establishing a first communications link
6 to the payload subnetwork of the first communications
7 network for communicating payload information;
8 b. establishing a second communications link
9 to the signaling subnetwork of the first communications
10 network for communicating signaling information in
11 accordance with a signaling protocol associated with the
12 signaling subnetwork;
13 c. establishing a third communications link
14 to the second communications network for communicating
15 information in accordance with a communications protocol
16 associated with the second communications network; and
17 d. coordinating the transfer of information
18 between the first communications network and the second
19 communications network using the first communications
20 link, the second communications link and the third
21 communications link.

1 38. The method according to claim 37, wherein the
2 first communications link is established through one of
3 a plurality of available access points contained within
4 the payload subnetwork of the first communications
5 network.

1 39. The method according to claim 37, wherein the
2 second communications link is established through one of
3 a plurality of available access points contained within
4 the signaling subnetwork of the first communications
5 network.

1 40. The method according to claim 37, wherein the
2 third communications link is established through one of

3 a plurality of available access points contained within
4 the second communications network.

1 41. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second
4 communications network includes initiating at least one
5 of the tasks of communications session setup,
6 communications session tear down, bridging of two
7 communications requests or routing of a communications
8 to a communications access point in one of the first
9 communications network or the second communications
10 network.

1 42. The method according to claim 37, further
2 comprising the step of coordinating operations,
3 administration, maintenance and provisioning functions.

1 43. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second
4 communications network includes use of a database
5 containing communications contact information for a
6 plurality of users.

1 44. The method according to claim 43, wherein the
2 database further contains a set of user profiles
3 including a user's preferred communications mode for
4 having communications contact established with another.

1 45. The method according to claim 37, further
2 comprising the step of processing payload information
3 using signal processing techniques.

1 46. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between

3 the first communications network and the second
4 communications network includes the steps of:
5 a. determining a desired characteristic
6 associated with a requested communication;
7 b. determining traffic conditions for each
8 of the first communications network and the second
9 communications network; and
10 c. determining from the traffic conditions
11 and from the desired characteristic associated with the
12 requested communication whether to route the
13 communication to the first communications network or to
14 the second communications network.

1 47. The method according to claim 46, wherein the
2 desired characteristic associated with a requested
3 communications includes at least one of a desired
4 quality of service for the communication, a time during
5 which the communication is to be routed, a cost of
6 routing the communication, or a user's preferred
7 communications mode for having communications contact
8 established with another.

1 48. The method according to claim 46, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second
4 communications network further includes the steps of:
5 e. selecting an access point of the
6 determined network to which the communication is to be
7 routed; and
8 f. initiating the routing of the
9 communication to the selected access point for the
10 determined network.

1 49. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second

4 communications network includes at least one of the
5 steps of:
6 a. initiating a communications contact in
7 response to a user clicking a hypertext link;
8 b. sending a message to a user requesting a
9 return communications contact;
10 c. scheduling a time to initiate a
11 communications contact between two users;
12 d. initiating a sequence of communications
13 contacts until the party to be contacted is reached; and
14 e. directing a communications contact
15 addressed to a user to a mailbox.

1 50. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second
4 communications network includes the step of routing a
5 communication based upon at least one of a desired
6 quality of service for the communication, a time during
7 which the communication is to be routed, a cost of
8 routing the communication, or a user's preferred
9 communications mode for having communications contact
10 established with another.

1 51. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second
4 communications network includes the step of bridging a
5 communications session between two users such that
6 information is transferred between the users over each
7 of the first communications network and the second
8 communications network.

1 52. The method according to claim 37, further
2 comprising the step of coordinating multimedia-enhanced
3 voice communications.

1 53. The method according to claim 37, wherein the
2 step of coordinating multimedia-enhanced voice
3 communications includes receiving voice information over
4 the first communications network and information other
5 than voice information over the second communications
6 network.

1 54. The method according to claim 53, wherein the
2 step of coordinating multimedia-enhanced voice
3 communications further includes directing the
4 information other than voice information received over
5 the second communications network to a multimedia
6 mailbox.

1 55. The method according to claim 37, further
2 comprising the step of universal messaging, said step of
3 universal messaging including the integration of e-mail
4 messages, facsimile messages, and voice messages into a
5 common mailbox.

1 56. The method according to claim 55, wherein the
2 step of universal messaging further includes converting
3 the content of messages from one format to another.

1 57. The method according to claim 55, wherein the
2 step of universal messaging further includes retaining
3 the multimedia content of received messages.

1 58. The method according to claim 55, wherein the
2 step of universal messaging further includes initiating
3 a return message in response to a user clicking a
4 hypertext link.

1 59. The method according to claim 55, wherein the
2 step of universal messaging further includes at least

3 one of the steps of:

- 4 a. retrieving at least one of a stored
- 5 e-mail message, a stored voice mail message, or a stored
- 6 facsimile message, wherein the stored e-mail message,
- 7 the stored voice mail message, and the stored facsimile
- 8 message may be stored in different sites;
- 9 b. scheduling of delivery and storage of
- 10 requested multimedia information;
- 11 c. storing a message;
- 12 d. printing a message; and
- 13 e. forwarding a message.

1 60. The method according to claim 59, wherein the
2 at least one of a stored e-mail message, a stored voice
3 mail message, or a stored facsimile message may be
4 retrieved by invoking an interactive voice response
5 system that facilitates retrieval of a text-based
6 message using a telephone.

1 61. The method according to claim 37, wherein the
2 step of coordinating the transfer of information between
3 the first communications network and the second
4 communications network includes the step of retrieving
5 information from a Web-based server accessible over the
6 second communications network using a telephone linked
7 to the method through the first communications network.

1 62. The method according to claim 61, wherein the
2 information retrieved from a Web-based server is
3 directed to at least one of a multimedia device or a
4 multimedia mailbox.

1 63. The method according to claim 61, wherein the
2 information retrieved from a Web-based server is
3 converted from one format to another.

1 64. A method of bridging a first communications
2 network having a payload subnetwork and a signaling
3 subnetwork with a second communications network that is
4 packet-switched, comprising the steps of:
5 a. establishing a first plurality of
6 communications links to the payload subnetwork of the
7 first communications network for communicating payload
8 information;
9 b. establishing a second plurality of
10 communications links to the signaling subnetwork of the
11 first communications network for communicating signaling
12 information in accordance with a signaling protocol
13 associated with the signaling subnetwork;
14 c. establishing a third plurality of
15 communications links to the second communications
16 network for communicating information in accordance with
17 a communications protocol associated with the second
18 communications network; and
19 d. coordinating the transfer of information
20 between the first communications network and the second
21 communications network using one of the first plurality
22 of communications links, one of the second plurality of
23 communications links and one of the third plurality of
24 communications links.

1 65. The method according to claim 64, wherein at
2 least one of the first plurality of communications links
3 is established through one of a plurality of available
4 access points contained within the payload subnetwork of
5 the first communications network.

1 66. The method according to claim 64, wherein at
2 least one of the second plurality of communications
3 links is established through one of a plurality of
4 available access points contained within the signaling
5 subnetwork of the first communications network.

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1 67. The method according to claim 64, wherein at
2 least one of the third plurality of communications links
3 is established through one of a plurality of available
4 access points contained within the second communications
5 network.

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